

Overview

HPE Online Double Conversion Rackmount Uninterruptible Power System

Does your IT workload require high availability power protection?

The HPE Online Double Conversion Rackmount Uninterruptible Power System (UPS) enables high system availability by eliminating transfer time to battery power for all connected IT equipment. HPE Enhanced Battery Management technology improves battery service life by up to 50% while monitoring battery health and providing advanced notice when replacement is required. Scale system runtime from minutes to hours by adding up to four Extended Runtime Modules.

The HPE Online Double Conversion UPS includes a 1GbE Network Management Module that provides access to the UPS and its embedded web-based user interface, allowing you to monitor and manage individual UPS systems. With Eaton® Intelligent Power Manager software, users can centralize remote monitoring and management of multiple HPE UPS systems and seamlessly integrate them into virtualization and hyperconverged platforms, such as VMware and HPE SimpliVity, to manage virtual machines and extend battery runtime.



HPE Line Interactive Single Phase Uninterruptible Power Systems (UPS)

Overview

Models

R5000 UPS Models

HPE G2 R5000/L6-30P 24A/208V Outlets (2) L6-20R (2) L6-30R/3U NA/JP UPS

Q7G09A

HPE G2 R5000/L6-30P 24A/208V Outlets (4) C19 (1) L6-30R/3U NA/JP UPS

Q7G10A

R6000 UPS Models

HPE G2 R6000/60309 3-wire 32A/230V Outlets (4) C13 (4) C19 (1) IEC 32A/3U Rackmount INTL UPS

Q7G11A

R8000 UPS Models

HPE G2 R8000/Hardwire/208V Outlets (4) L6-20 (2) L6-30/6U Rackmount NA/JP UPS

Q7G12A

HPE G2 R8000/Hardwire/230V Outlets (6) C19 (2) IEC 32A/6U Rackmount INTL UPS

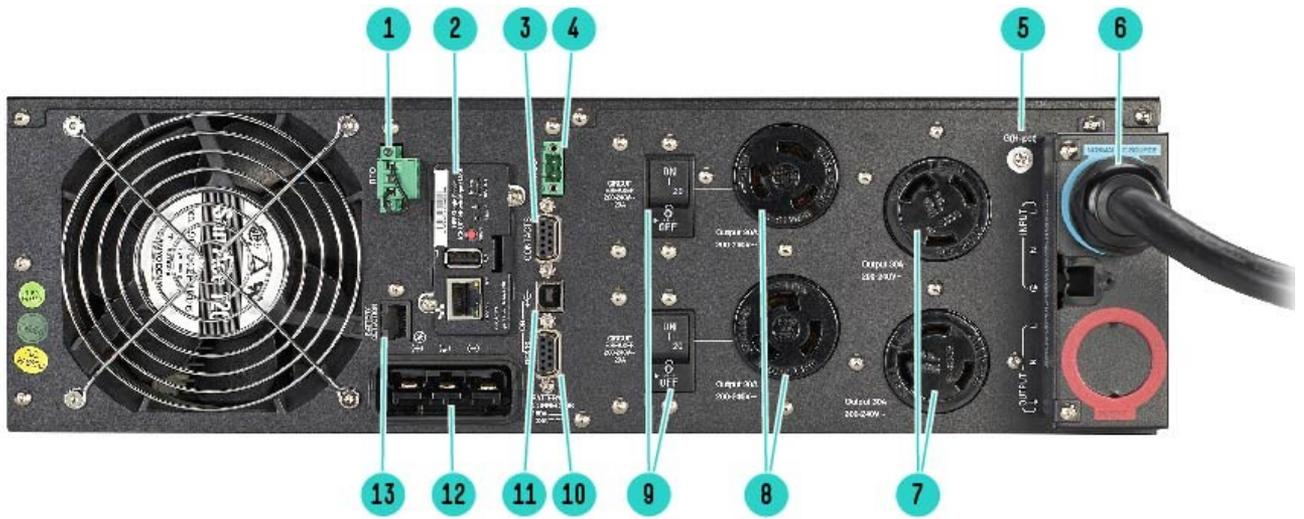
Q7G13A



Front View R5000 UPS (Q7G09A and Q7G10A)/ R6000 UPS (Q7G11A)

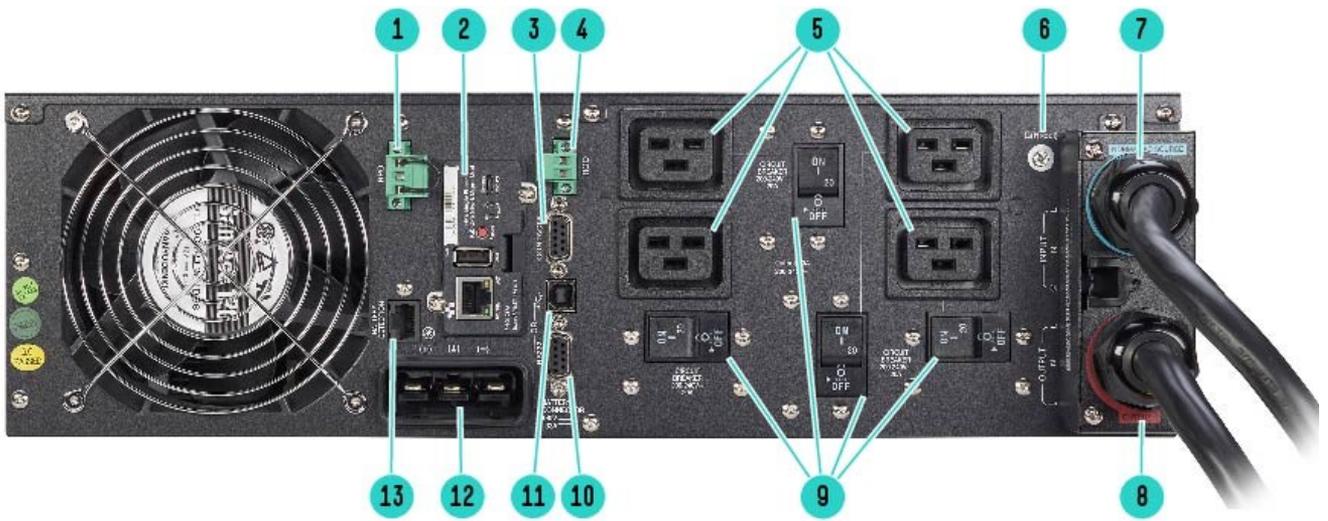
- | | |
|-----------------------|------------------------|
| 1. Escape Button | 4. Enter/Select button |
| 2. Scroll up button | 5. Power button |
| 3. Scroll down button | |

Overview



Rear View R5000 UPS (Q7G09A)

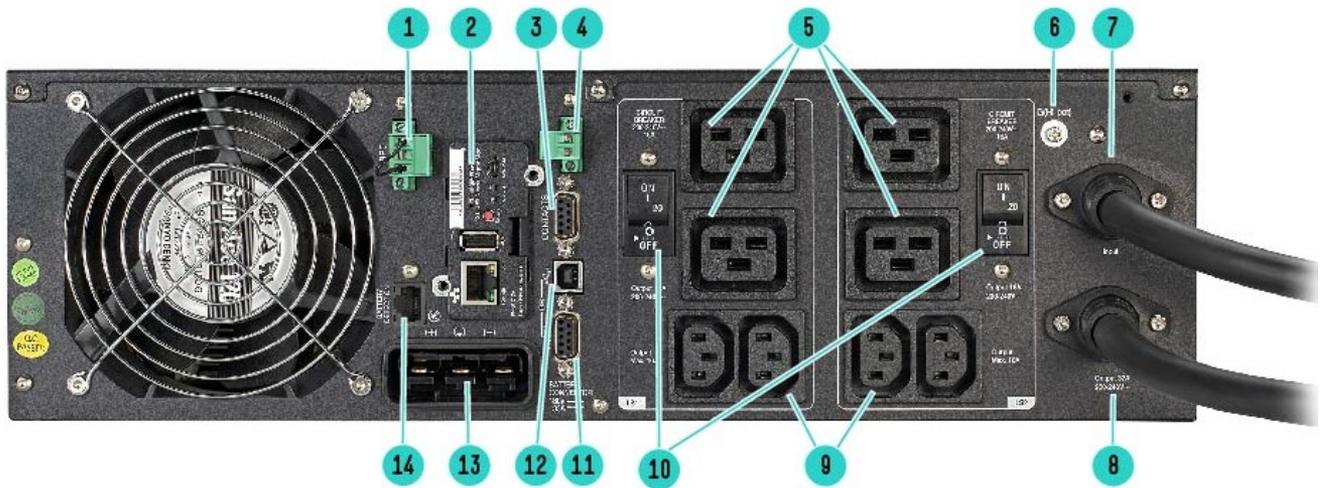
- | | |
|---|--|
| 1. Remote Power Off | 8. 20A L6-20R receptacles |
| 2. 1GbE UPS Network Management Module | 9. Circuit Breakers for L6-20R receptacles |
| 3. Contacts (for reporting status of UPS) | 10. RS232 Serial Communications Port |
| 4. Remote On/Off | 11. USB Serial Communications Port |
| 5. Chassis ground terminal | 12. Power from ERM |
| 6. Input power line cord with NEMA L6-30 plug | 13. Battery Detection (ERM) |
| 7. 30A L6-30R receptacles | |



Rear View R5000 UPS (Q7G10A)

- | | |
|---|---|
| 1. Remote Power Off | 8. 30A L6-30R receptacle |
| 2. 1GbE UPS Network Management Module | 9. Circuit Breakers for C19 receptacles |
| 3. Contacts (for reporting status of UPS) | 10. RS232 Serial Communications Port |
| 4. Remote On/Off | 11. USB Serial Communications Port |
| 5. IEC C19 receptacles | 12. Power from ERM |
| 6. Chassis ground terminal | 13. Battery Detection (ERM) |
| 7. Input power line cord with NEMA L6-30 plug | |

Overview



Rear View R6000 UPS (Q7G11A)

- | | |
|---|---|
| 1. Remote Power Off | 8. IEC 32A receptacle |
| 2. 1GbE UPS Network Management Module | 9. IEC C13 receptacles |
| 3. Contacts (for reporting status of UPS) | 10. 20A Circuit Breaker for load segments 1 & 2, respectively |
| 4. Remote On/Off | 11. RS232 Serial Communications Port |
| 5. IEC C19 receptacles | 12. USB Serial Communications Port |
| 6. Chassis ground terminal | 13. Power from ERM |
| 7. Input power cord with 3-pin IEC 32A plug | 14. Battery Detection (ERM) |

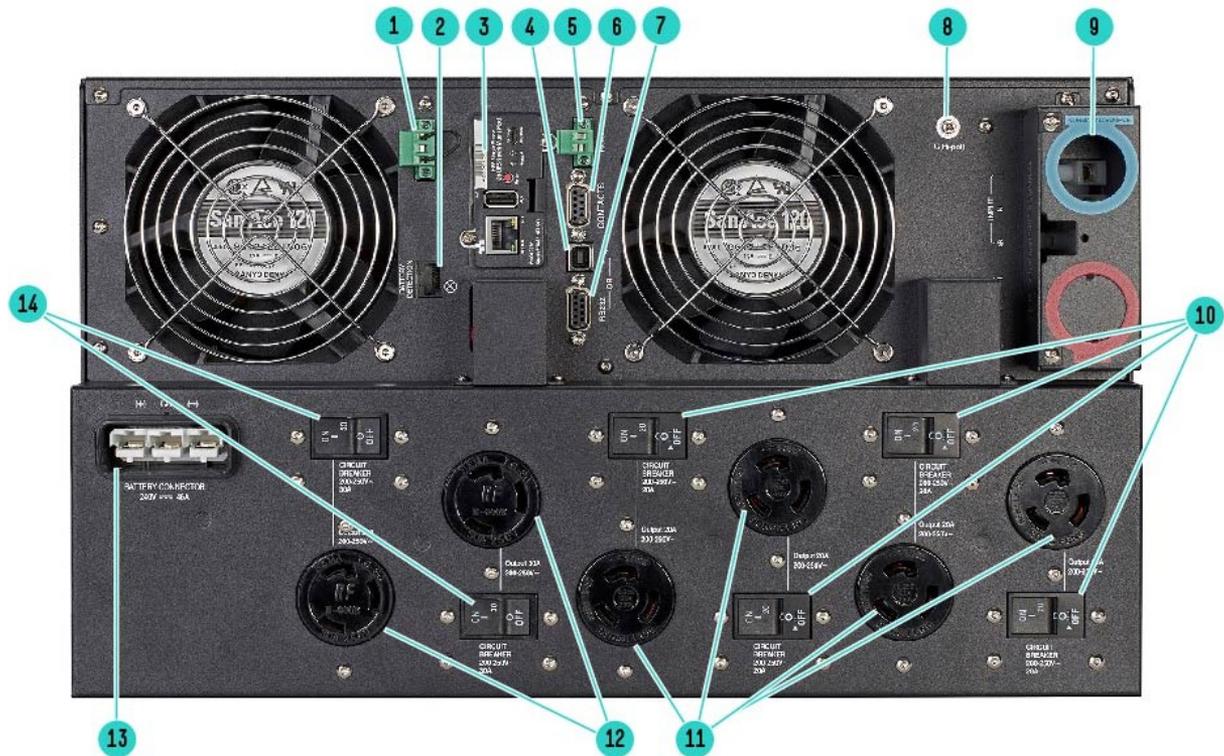
Overview



Front View R8000 UPS (Q7G12A and Q7G13A)

- | | |
|-----------------------|------------------------|
| 1. Escape Button | 4. Enter/Select button |
| 2. Scroll up button | 5. Power button |
| 3. Scroll down button | |

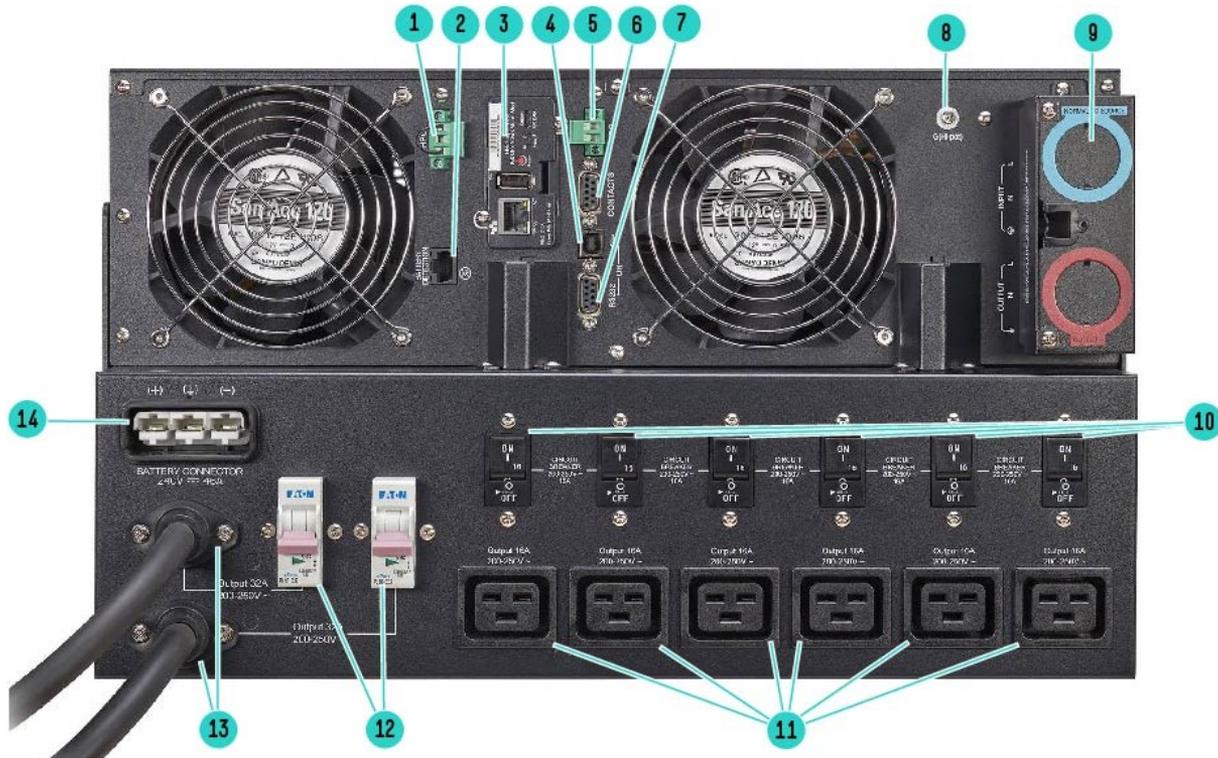
Overview



Rear View R8000 UPS (Q7G12A)

- | | | | |
|----|--|-----|---|
| 1. | Remote Power Off | 8. | Chassis ground terminal |
| 2. | Battery Detection (ERM) | 9. | Hardwire input power |
| 3. | 1GbE UPS Network Management Module | 10. | Circuit Breakers for L6-20R receptacles |
| 4. | USB Serial Communications Port | 11. | 20A L6-20R receptacles |
| 5. | Remote On/Off | 12. | 30A L6-30R receptacles |
| 6. | Contacts (for reporting status of UPS) | 13. | Power from ERM |
| 7. | RS232 Serial Communications Port | 14. | Circuit Breakers for L6-30R receptacles |

Overview



Rear View R8000 UPS (Q7G13A)

- | | |
|---|---|
| 1. Remote Power Off | 8. Chassis ground terminal |
| 2. Battery Detection (ERM) | 9. Hardwire input power |
| 3. 1GbE UPS Network Management Module | 10. Circuit Breakers for C19R receptacles |
| 4. USB Serial Communications Port | 11. 16A C19R receptacles |
| 5. Remote On/Off | 12. Circuit Breakers for IEC receptacles |
| 6. Contacts (for reporting status of UPS) | 13. 32A IEC receptacles |
| 7. RS232 Serial Communications Port | 14. Power from ERM |

Standard Features

HPE Online Double Conversion UPS Technology

The HPE Online Double Conversion UPS operates by using online double conversion technology that converts incoming AC power to DC power, and then back to AC power when exiting the UPS. The conversion to DC power supports a constant interface with the UPS battery, isolating output power from input power 100% of the time and ensuring zero transfer time to battery power.

Availability

- Enhanced Battery Management technology that uses an advanced, three-stage charging technique that increases battery service life by up to 50%
- Scale system runtime from hours to minutes by adding up to 4 Extended Runtime Modules (ERM) per UPS
- Internal bypass guarantees that connected loads will continue to have access to utility power in the event a system overload or fault has occurred.

Manageability

- Access the embedded UPS user interface using the HPE 1GbE Network Management Module that ships standard with each model
- Use HPE Power Protector to manage individual UPS systems and communicate shutdown protocols with all connected servers
- Next-generation intuitive LCD interface that provides a graphical display of all critical UPS information in a single view

Serviceability

- Enhanced Battery Management closely monitors battery health to provide advanced notice (up to 30 days) when batteries need replacement
- Hot-swappable batteries allow trained users to perform upgrades and replacements of the batteries reducing Mean Time to Repair while improving system uptime and access to power when battery maintenance is required
- Flash upgradeable firmware allow users to conveniently install firmware maintenance releases remotely using FTP

Consolidate and Centralize UPS Management with Eaton Intelligent Power Manager

HPE and Eaton are collaborating to bring increased value. Lab-tested for interoperability, Eaton's Intelligent Power Manager® (IPM) software provides the tools needed to monitor and manage power equipment in your physical or virtual environment, keeping IT devices up and running during a power or environmental event.

- Remotely monitor and manage multiple HPE power devices across your network from a single interface
- Ensure availability and data integrity of HPE SimpliVity hyperconverged systems
 - Provides a complete view of both the IT and power infrastructure in a single console
 - Dynamically move VMs with automated policies based on environmental conditions
- Recover VMs in the correct sequence based on criticality
- Mitigate equipment overheating and power anomalies through integration with HPE OneView:
 - Communicate actions to the HPE server via HPE iLO
 - Trigger preventive actions such as power capping based on environmental conditions
- Seamlessly integrate with VMware®, and other leading virtualization platforms
 - Initiate live migration of virtual machines (VMs) to automatically and transparently migrate them during power disruptions to unaffected devices
 - Suspend non-critical virtual machines, consolidate critical virtual machines, and shut down unused servers to extend battery runtime
 - Gracefully shutdown computers, VMs and host servers during an extended power outage

Eaton IPM offers three levels of licenses: Monitor, Basic and Gold. IPM Gold provides the most complete set of capabilities to enhance HPE solution performance.

Standard Features

Features

	IPM Monitor	IPM Basic	IPM Gold
Supported UPS nodes	Up to 500	Up to 500	Up to 500
Supported rack PDU nodes	Up to 200	Up to 200	Up to 200
Auto discovery	■	■	■
Mass firmware upgrade tool	■	■	■
Mass node-settings configuration tool	■	■	■
Send email notifications	■	■	■
Monitor third-party devices	■	■	■
Event-based PDU outlet control		■	■
Virtualized host shutdown		■	■
Power capping of HPE servers		■	■
Targeted VM migration			■
Targeted VM graceful shutdown			■
Shares data with VMware's vRealize Operations			■
Trigger actions from third-party devices			■

The Eaton IPM Monitor is available via free download:

<https://powerquality.eaton.com/products-services/power-management/software-drivers/intelligent-pm.asp>

Configuration Information

UPS Network Module

All HPE G2 Online Double Conversion UPS models include the 1GbE UPS Network Module as standard.

The HPE UPS Network Module enables you to monitor and manage power environments through comprehensive control of HPE UPSs. The HPE UPS Management Module can support either a single UPS configuration or provide additional power protection with support for dual redundant UPS configuration for no-single-point-of-failure. The additional serial ports will provide greater power management control and flexible monitoring.

The management module can be configured to send alert traps to HPE Systems Insight Manager and other SNMP management programs or used as a standalone management system. This flexibility enables you to monitor and manage UPSs through the network. To facilitate day-to-day maintenance tasks, the embedded management software provides detailed system logs.

The HPE UPS Network Module provides remote management of a UPS by connecting the UPS directly to the network. Configuration & Management of the UPS from anywhere and at any time via a standard web browser.

Extended Runtime Modules (ERM)

HPE G2 R5000/6000 3U Extended Runtime Module

Q7G14A

HPE G2 R8000 3U Extended Runtime Module

Q7G15A

Extended Runtime Modules increase the available runtime for the larger rack mounted UPS units to allow customers to ensure all of their applications can be gracefully shutdown in the event of a power failure.

NOTE: #0D1 will appear after the part number on the sales order if HPE factory integration is indicated. (Up to 4 ERMs can be chosen)

3U/6U UPS ERM Shipping Kit

HPE 3U/6U Rack/Tower UPS Shipping Kit

Q9Z44A

HPE G2 Online Double Conversion UPS models require

NOTE: The shipping kit consists of a heavy duty shelf and required mounting hardware for attaching the UPS or ERM to the rack. This kit is an option that is only required if the UPS and or ERM are going to be mounted into a rack that will be shipped via transport. One of these kits is required per unit, whether UPS or ERM.

Jumper Cord Options

HPE 2m 16A C19-C20 Jumper Cord

AF574A

HPE 1.2m 16A C19-C20 Jumper Cord

AF575A

Note: Standard, non-locking IEC jumper cable for worldwide use.

HPE C19/C20 WW 16A 0.7m Black Locking Jumper Cord

Q0R19A

HPE C19/C20 WW 16A 1.2m Black Locking Jumper Cord

Q0P71A

HPE C19/C20 WW 16A 2m Black Locking Jumper Cord

Q0P72A

HPE C19/C20 WW 16A 2.5m Black Locking Jumper Cord

Q0P73A

HPE C19/C20 WW 16A 0.7m 6pc Black Locking Jumper Cord

Q0R15A

HPE C19/C20 WW 16A 1.2m 6pc Black Locking Jumper Cord

Q0R16A

HPE C19/C20 WW 16A 2m 6pc Black Locking Jumper Cord

Q0R17A

HPE C19/C20 WW 16A 2.5m 6pc Black Locking Jumper Cord

Q0R18A

Note: Locking IEC jumper cable that will lock to server, switch, or PDU input power outlet. Compatible, but will not lock to UPS.

HPE 3.6m C19-NEMA L6-20P NA/JP Power Cord

AF593A

Note: NEMA to IEC jumper cord that can connect to L6-20 receptacles on NA/JPN models.

Service and Support

Warranty

When you need it, use outstanding HPE support services for your whole data center environment. With HPE Pointnext operational services, have the security of knowing that your HPE UPS will be covered at the same service level and coverage period as your HPE server. HPE G2 Online Double Conversion UPSs are backed by a 3-year warranty, which covers depot repair of the UPS, or direct replacement of the UPS. Also, standard on all HPE UPS units is our exclusive 30-day Battery Pre-Failure Warranty, which ensures that when customers receive notification from HPE Power Manager Software that the battery may fail, the battery is replaced free of charge under the warranty. This warranty is offered worldwide.

Service and Support

HPE Technology Services

HPE Technology Services offers you consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, boost availability and avoid downtime.

Protect your business beyond warranty with HPE Pointnext operational services

When you buy HPE Options, it's also a good time to think about what level of service you may need. HPE Pointnext operational services provide total care and support expertise with committed response choices designed to meet your IT and business need.

For ProLiant servers and storage systems, this service covers HPE-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, also including PDU, ITAC, and UPS products (less than 12 kVA). These items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

For more information

To learn more on services for HPE Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: <https://www.hpe.com/us/en/support.html> or <https://www.hpe.com/us/en/services/operational.html>

Technical Specifications

Model Matrix - HPE G2 R5000, R6000, and R8000 UPS Models

Model	Part Number	Operating Voltage Settings	Power Out (VA/Watts)	Input Connection	Output Connection	Breaker Amp Rating/ Single of Double Pole
R5000	Q7G09A	200	5000VA / 4500W	L6-30P (10ft power cord)	2x L6-20R 2x L6-30R	20A / Double Pole
		208	5000VA / 4500W			
R5000	Q7G10A	200	5000VA / 4500W	L6-30P (10ft power cord)	4x C-19 1x L6-30R	20A / Double Pole
		208	5000VA / 4500W			
R6000*	Q7G11A	230V	6000VA / 5400W	IEC 32A (10ft power cord)	4x C-13 4x C-19 1x IEC 32A	16A / Single Pole
R8000	Q7G12A	200	8000VA / 7200W	Terminal Block (Hardwire)	4x L6-20R 2x L6-30R	20A/2 pole for 4x L6-20R 30A/2 pole for 2x L6-30R
		208	8000VA / 7200W			
R8000	Q7G13A	230V	8000VA / 7200W	Terminal Block (Hardwire)	6x C-19 2x IEC 32A	16A/1pole for 6x C19 32A/1pole for 2x IEC 32A

- Supports switchable load segments: LS1: 2x C-13, 2x C-19; LS2: 2x C-13, 2x C-19

Runtime Tables

R5000 UPS – Models Q7G09A, Q7G10A

Load	25% (Minutes)	50% (Minutes)	75% (Minutes)	100% (Minutes)
Internal Battery	27	11	5.3	3.2
+ 1 ERM	103	48	27	20
+ 2 ERM	175	88	53	38
+ 3 ERM	262	123	83	54
+ 4 ERM	377	167	109	80

NOTE: Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. Runtime given in minutes. Assumes 0.9 PF.

R6000 UPS – Model Q7G11A

Load	25% (Minutes)	50% (Minutes)	75% (Minutes)	100% (Minutes)
Internal Battery	22	8.5	4.5	3
+ 1 ERM	85	38	24	16
+ 2 ERM	147	71	45	28
+ 3 ERM	214	104	62	47
+ 4 ERM	287	133	90	58

NOTE: Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. Runtime given in minutes. Assumes 0.9 PF.

Technical Specifications

R8000 UPS – Model Q7G12A

Load	25% (Minutes)	50% (Minutes)	75% (Minutes)	100% (Minutes)
Internal Battery	35	16	9	5
+ 1 ERM	85	36	23	16
+ 2 ERM	140	65	36	27
+ 3 ERM	173	86	53	36
+ 4 ERM	220	118	72	50

NOTE: Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. Runtime given in minutes. Assumes 0.9 PF.

R8000 UPS – Model Q7G13A

Load	25% (Minutes)	50% (Minutes)	75% (Minutes)	100% (Minutes)
Internal Battery	28	12	6.5	3.5
+ 1 ERM	72	29	18	12
+ 2 ERM	112	51	29	21
+ 3 ERM	151	73	46	29
+ 4 ERM	185	95	58	42

NOTE: Backup times are estimated for typical applications. Actual performance will depend on load and battery conditions. Runtime given in minutes. Assumes 0.9 PF.

Technical Specifications

Electrical Input	Voltage Range	200 – 250VAC
	Frequency	40/60 Hz (if 50Hz input)
	Online Efficiency Mode	92.8% (R5000 models) 94.5% (R6000, R8000 models)
	High Efficiency Mode	98% all models
Electrical Output	On battery Regulation	-10% to +6% of nominal voltage
	Voltage Wave Form	Sinusoidal
	Connections	See Model Matrix
	Output protection	Firmware overload sensing and control
Battery	Type	Maintenance-free, rechargeable, valve regulated lead-acid batteries
	Extended Runtime Modules	Add up to 4 ERM's per UPS model
	Backup Time	See Runtime Tables
	Recharge Time	<4 hours to charge 90% usable capacity. <24 hours for complete recharge
	Voltage	R5KVA, R6KVA = 180VDC R8KVA = 240VDC
Communications	Serial Ports	RS232 (via RJ45 connector to DB9) and USB ports (ships with communication cables)
	Network Communication	Includes HPE 1GbE Network Management Module
	LCD Interface	LCD Display and Button Interface on front panel
	Management Software	HPE Power Protector and HPE Intelligent Power Manager included via free download
Environmental and Safety	Operating Temperature	0°C to 40°C (32°F to 104°F)
	Non-operating Temperature	-15°C to 40°C (5°F to 104°F) (with battery) -15°C to 50°C (5°F to 122°F) (without battery)
	Operating Humidity	0% to 95% (non-condensing)
	Storage Humidity	5% to 90% (non-condensing)
	Operating Altitude	Up to 1500 m above sea level
	Audible Noise	<45dB at 1m (MX ref.) for R5000/6000 models <48dB at 1m (EXRT ref.) for R8000 models
	Safety Markings	NA/JPN: UL/cUL, FCC Class A, NOM,VCCI INTL: CE, TUV, C-tick, EAC, KCC, BSMI
	Safety Certifications	UL1778, UL60950-1; CSA22.2 No.107.3-05;; EN609501-, EN62040-1 IEC62040-1-1, IEC 60950-1
	EMC Markings	FCC-A; CISPR 22; VCCI A; CE, BSMI, C-TICK
	Emissions	FCC CFR 47, Part 15 Class A, EN50091-2
	Immunity	EN 55024; EN 50091-2 consisting of IEC 61000-4-2 thru IEC 61000-4-6; IEC 61000-4-11
	Surge Suppression	Conforms to IEEE 587B and ANSI C62.41
	RPO/ROO	The Normally Closed (NC) RPO shuts off power to all UPS outlets when opened. The UPS must be manually restarted once the terminals are closed again. There is a preinstalled jumper in the RPO terminals. The Normally Open (NO) ROO initiates a UPS Power On function when closed. Opening the terminals again will shut off the UPS

Technical Specifications

Environment-friendly Products and Approach - End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner. The EU WEEE Directive (2012/19/EU) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **[Hewlett Packard Enterprise web site](#)**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
02-Apr-2019	Version 1	New	New QuickSpecs.

   
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